

Comparison of Riparian Management

General Riparian Background: Riparian areas are critical for large wood recruitment, shade, stream bank and slope stability, sediment filtering, and air temperature moderation. Extensive scientific research and analysis documents the importance of riparian functions to water quality and fish. The areal extent and configuration of riparian management areas (RMAs) and the management requirements within RMAs are the primary determinants of how well water quality and fish are protected. Forest management practices for private, State, Tribal, and Federal forest lands include riparian protection measures (called Best Management Practices or BMPs) as the mechanism for protecting water quality, fisheries, and wildlife. Timber operators implementing BMPs are not considered to be in violation of water quality standards under some forest practice rules such as the OR Forest Practices Act (FPA).

Bar Graph: The Bar Graph shows the relative area that would be designated as RMA under the different rules for private, State, Tribal, and Federal forest lands (darker bars)... and also the relative area managed as mature forest (lighter bars) within the North Fork Kilches watershed. The different RMA scenarios include the Northwest Forest Plan (NWFP), forestry rules for the Confederated Tribes of the Warm Springs (Warm Springs), the proposed habitat conservation plan (HCP) requirements for the Northcoast State Forests, and the Oregon FPA and the Washington Forests and Fish rules for private land in OR and WA, respectively.

The darker bars in the graph express the relative acreage designated as RMA under the different forest practice rules in relation to the NWFP. Under the NWFP 100% of the riparian areas are designated as RMA and are managed (primarily passive management) to achieve mature forest conditions. By comparison RMA area designated under the Oregon Forest Practices would constitute approximately 7% of the area designated under the NWFP. The difference is due to the NWFP's wider RMAs and because small nonfish streams, which constitute around half of stream network in the North Fork Kilches watershed, receive very limited protection under the OR FPA.

The lighter bars provide a relative comparison of tree retention requirements (how much would be managed as mature forest) within RMAs under the forestry rules for private, State, Tribal, and Federal forest lands compared to the NWFP. The forestry rules for the NWFP would result in mature forest conditions in close to 100% of the RMAs. By comparison, the OR FPA basal area retention requirements would constitute approximately 3% of the mature forest within RMAs compared to the NWFP within the North Fork Kilches riparian network. Natural events such as blow down, fire, landslides and disease would reduce the basal area/mature forest level under all of the forest management scenarios but was too difficult to predict to include in the comparison effort.

Sidebar:

Basal Area is a forestry measure that serves as a flexible surrogate for tree retention and is expressed as sq. feet per acre. A large tree has more basal area than a small tree (basal area = tree diameter at breast height squared x .005454). For example, a 4 foot diameter tree has a basal area of about 12.6 square feet/acre while a 1 foot diameter tree has a basal area of about .8 square feet/acre.

Mature Forest The bar chart used the ODF/WA DNR definition of mature forest (e.g., fully

stocked 120 yr. stand with an average basal area of 332 sq.ft/acre)...other inventories of basal area within mature forest stands range from 200 to 600 sq/ft. acre). The definition of mature forest is more complex than just a given level of basal area. Mature forests have high basal area, large trees, snags, down wood, multiple species and canopies. The lack of requirements for these other components, particularly for private forest practices necessitated using basal area.

North Fork Kilches EPA picked the North Fork Kilches watershed because it is a typical Coast Range watershed where the new OR FPA rules would apply. It is also within the Tillamook State Forest so we didn't have any private lands issues to deal with. It had good, existing stream network data...we used the OR Dept. of Forestry and BLM GIS stream coverages/typing for the North Fork Kilches watershed. In absolute acreage terms (as opposed to NWFP RMA acreage comparison) around 6% of the NF Kilches watershed would be designated as RMA under the OR FPA. ODF predicts that 2 - 8% of a watershed would be RMA's under the OR FPA across the State so we are in the ball park.

EPA Comparison EPA's GIS experts mapped the respective private, State, Tribal and Federal RMA requirements for stream sizes and types. EPA met with the respective forestry agencies (except ODF staff dealing with the FPA for private lands...they wouldn't work with us) and the Warm Springs Tribe to confirm that our representation of the rules was accurate. All of the entities we met with (including ODF staff dealing with State forest land HCP) confirmed we accurately represented their rules.